IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re PATENT APPLICATION OF

Applicants :	Robert TERNEU et al.	
Appln. No. :	Division of 09/170,063	
Filed :	April 10, 2001	**PRELIMINARY AMENDMENT**
For :	METHOD OF MANUFACTURING A GLAZING PANEL (As amended)	
Atty. Dkt. :	31642-167413	

April 10, 2001

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Preliminary Amendment accompanies a letter requesting a Divisional Application dated April 10, 2001. Prior to calculation of any fees, please amend the Application as follows.

IN THE TITLE:

Please replace the present title with the following new title:

METHOD OF MANUFACTURING A GLAZING PANEL.

IN THE CLAIMS:

Please cancel claim 1 and add new claims 29-76 as follows:

29. A method of manufacturing a glazing panel having a solar factor (FS) of less than 70% and a luminous transmittance (TL) of less than 70%, and being comprised of a vitreous substrate and a tin/antimony oxide coating layer provided on the vitreous substrate and having a Sb/Sn molar ratio ranging from 0.01 to 0.5, the method comprising the steps of:

providing reactants in gaseous phase which comprise tin and antimony compounds, which are present in an amount effective to form the tin/antimony oxide coating layer; and

forming the tin/antimony oxide coating layer pyrolytically on the vitreous substrate from the reactants in gaseous phase to provide the glazing panel having a solar factor (FS) of less than 70% and a luminous transmittance (TL) of less than 70%.

30. The method according to claim 29, wherein the reactants in the gaseous phase comprise a gaseous reactant mixture, and wherein the tin/antimony oxide coating layer is formed pyrolytically on the vitreous substrate by bringing the gaseous reactant mixture comprising a source of antimony and a source of tin into the presence of a heated source of oxygen.

31. The method according to claim 29, further comprising the steps of:

mixing the reactants in the gaseous phase to provide a gaseous reactant mixture;

feeding the gaseous reactant mixture to a first nozzle;

feeding superheated water vapor to a second nozzle; and

causing the gaseous reactant mixture from the first nozzle to be brought into the presence of the superheated water vapor from the second nozzle so as to form the tin/antimony oxide coating layer on the vitreous substrate.

32. The method according to claim 29, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer.

33. The method according to claim 29, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer, the at least one intermediate coating layer comprising at least one coating layer selected from the group consisting of a haze reducing coating layer and an anti-reflection coating layer.

34. The method according to claim 29, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer, the at least one intermediate coating layer comprising at least one coating layer selected from the group consisting of a haze reducing coating layer and an anti-reflection coating layer, and being comprised of one of SiO_2 or SiO_x.

35. The method according to claim 29, further comprising the step of depositing at least one additional coating layer comprised of tin oxide doped with fluorine on the tin/antimony oxide coating layer.

36. The method according to claim 29, further comprising the step of depositing at least one additional low-emissivity coating layer on the tin/antimony oxide coating layer from reactants in a gaseous phase.

37. The method according to claim 29, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio of at least 0.03.

38. The method according to claim 29, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio of at least 0.05.

39. The method according to claim 29, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio ranging from 0.05 to 0.15.

40. The method according to claim 29, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio ranging between 0.03 and 0.09.

41. The method according to claim 29, wherein the tin/antimony oxide coating layer has a thickness ranging from 100 to 500 nm.

42. The method according to claim 29, wherein the tin/antimony oxide coating layer has a thickness ranging from 250 to 450 nm.

43. The method according to claim 29, wherein the glazing panel has a solar factor (FS) of less than 60%.

44. The method according to claim 29, wherein the glazing panel has a solar factor (FS) of less than 50%.

45. The method according to claim 29, wherein the glazing panel has a luminous transmittance (TL) of less than 69%.

46. The method according to claim 29, wherein the glazing panel has a luminous transmittance (TL) ranging from 40 to 65%.

47. The method according to claim 29, wherein the vitreous substrate is a clear sheet of glass.

48. The method according to claim 29, wherein the vitreous substrate is a colored sheet of glass.

49. The method according to claim 29, wherein the glazing panel is a monolithic glazing panel.

50. The method according to claim 29, wherein the tin/antimony oxide coating layer is an exposed coating layer.

51. The method according to claim 29, wherein the reactants in gaseous phase which are effective to form the tin/antimony oxide coating layer comprise a source of tin which is monobutyl trichloro tin (MBTC).

52. The method according to claim 29, wherein the reactants in gaseous phase which are effective to form the tin/antimony oxide coating layer comprise a source of antimony which is an organo antimony compound.

53. A method of manufacturing a glazing panel having a solar factor (FS) of less than 70% and being comprised of a vitreous substrate and a tin/antimony oxide coating layer provided on the vitreous substrate and having a Sb/Sn molar ratio ranging from 0.03 to 0.5, the method comprising the step of:

providing reactants in gaseous phase which comprise tin and antimony compounds, which are present in an amount effective to form the tin/antimony oxide coating layer; and

forming the tin/antimony oxide coating layer pyrolytically on the vitreous substrate from the reactants in gaseous phase to provide the glazing panel having a solar factor (FS) of less than 70%.

54. The method according to claim 53, wherein the reactants in the gaseous phase comprise a gaseous reactant mixture comprising a source of tin and a source of antimony, and wherein the tin/antimony oxide coating layer is formed pyrolytically on the vitreous substrate by bringing the gaseous reactant mixture into the presence of a heated source of oxygen.

55. The method according to claim 53, further comprising the steps of:

mixing the reagents in the gaseous phase to provide a gaseous reactant mixture;

feeding the gaseous reactant mixture to a first nozzle;

feeding superheated water vapor to a second nozzle; and

causing the gaseous reactant mixture from the first nozzle from the first nozzle to be brought into the presence of the superheated water vapor from the second nozzle so as to form the tin/antimony oxide coating layer on the vitreous substrate.

56. The method according to claim 53, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer.

57. The method according to claim 53, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer, the at least one intermediate coating layer comprising at least one coating layer selected from the group consisting of a haze reducing coating layer and an anti-reflection coating layer.

58. The method according to claim 53, further comprising the step of depositing at least one intermediate coating layer between the vitreous substrate and the tin/antimony oxide coating layer, the at least one intermediate coating layer comprising at least one coating layer selected from the group consisting of a haze reducing coating layer and an anti-reflection coating layer, and being comprised of one of SiO_2 or SiO_x.

59. The method according to claim 53, further comprising the step of depositing at least one additional coating layer comprised of tin oxide doped with fluorine on the tin/antimony oxide coating layer.

60. The method according to claim 53, further comprising the step of depositing at least one additional low-emissivity coating layer on the tin/antimony oxide coating layer from reactants in a gaseous phase.

61. The method according to claim 53, whereby the glazing panel has a luminous transmittance (TL) of less than 70%.

62. The method according to claim 53, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio of at least 0.05.

63. The method according to claim 53, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio ranging from 0.05 to 0.15.

64. The method according to claim 53, wherein the tin/antimony oxide coating layer has a Sb/Sn molar ratio ranging from 0.03 to 0.09.

65. The method according to claim 53, wherein the tin/antimony oxide coating layer has a thickness ranging from 100 to 500 nm.

66. The method according to claim 53, wherein the tin/antimony oxide coating layer has a thickness ranging from 250 to 450 nm.

67. The method according to claim 53, wherein the glazing panel has a solar factor (FS) of less than 60%.

68. The method according to claim 53, wherein the glazing panel has a solar factor (FS) of less than 50%.

69. The method according to claim 53, wherein the glazing panel has a luminous transmittance (TL) of less than 69%.

70. The method according to claim 53, wherein the glazing panel has a luminous transmittance (TL) ranging from 40 to 65%.

71. The method according to claim 53, wherein the vitreous substrate is a clear

sheet of glass.

72. The method according to claim 53, wherein the vitreous substrate is a colored sheet of glass.

73. The method according to claim 53, wherein the glazing panel is a monolithic glazing panel.

74. The method according to claim 53, wherein the tin/antimony oxide coating layer is an exposed coating layer.

75. The method according to claim 53, wherein the reactants in gaseous phase which are effective to form the tin/antimony oxide coating layer comprise a source of tin which is monobutyl trichloro tin (MBTC).

76. The method according to claim 53, wherein the reactants in gaseous phase which are effective to form the tin/antimony oxide coating layer comprise a source of antimony which is an organo antimony compound.

IN THE ABSTRACT:

Please delete the present abstract and add the following new abstract:

ABSTRACT OF THE DISCLOSURE

A method of manufacturing a glazing panel having a solar factor (FS) of less than 70% and being composed of a vitreous substrate and a tin/antimony oxide coating layer provided on the vitreous substrate and having a Sb/Sn molar ratio ranging from 0.01 to 0.5, preferable 0.03 to 0.5, the method including the steps of providing reactants in gaseous phase which comprise tin and antimony compounds, which are present in an amount effective to form the tin/antimony oxide coating layer; and forming the tin/antimony oxide coating layer pyrolytically on the vitreous substrate from the reactants in gaseous phase to provide the glazing panel having a solar factor (FS) of less than 70%.

REMARKS

This Preliminary Amendment replaces original article claim 1 with new method claims 29-76, replaces the original title and the original abstract with a new title and a new abstract to reflect the subject matter of the new claims pending in this Divisional Application. The new abstract has been reproduced on a separate sheet attached hereto as new page 48 of the Application.

Addition of 28 claims in excess of 20 total claims necessitates the payment of an additional claim fee of $504 and a check including this amount is attached. Should no check be attached or should any additional fee be deemed due, please charge the same to Deposit Account 22-0261 and advise us accordingly.

Claims 29-76 are now pending in this Divisional Application.

An early action of the merits is earnestly solicited.

Respectfully submitted,

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ABSTRACT OF THE DISCLOSURE

A method of manufacturing a glazing panel having a solar factor (FS) of less than 70% and being composed of a vitreous substrate and a tin/antimony oxide coating layer provided on the vitreous substrate and having a Sb/Sn molar ratio ranging from 0.01 to 0.5, preferable 0.03 to 0.5, the method including the steps of providing reactants in gaseous phase which comprise tin and antimony compounds, which are present in an amount effective to form the tin/antimony oxide coating layer; and forming the tin/antimony oxide coating layer pyrolytically on the vitreous substrate from the reactants in gaseous phase to provide the glazing panel having a solar factor (FS) of less than 70%.